

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.11.94
Test oil : ISO 4113

Combination No. : 0402638806

Injection pump
Pump designation : PE8P120A120RS7219
EP type number : 0412628846

Governor
Governor design. : RQV275...1150PA908
: -1
Governor no. : 0421813875

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : CV8
Power KW : 800.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 6- 5- 4
: - 8- 7- 2

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 311.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 311.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : +- 4.0

rack travel mm : 10.55
Rated speed rpm : 1195
Tolerance 1/min : +- 5

rack travel mm : 4.00

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Rated speed rpm : 1285
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 100
CRT mm min. : > 1.50

CONTINUOUS-ACTION CONTR _

Rated speed rpm : 313

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.55
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 11.55
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 11.55
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Pressure hPa : 850
rack travel mm : 11.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : < 100
Rated speed rpm : > 195

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 320.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.55
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.94
Test oil : ISO 4113

Combination No. : 0400074779

Injection pump
Pump designation : PES4M55C320RS187
EP type number : 0410054936

Governor
Governor design. : RSF375/2300M56-10
Governor no. : 0420021130

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM601-Abgl. MJ90
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

A04

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 17.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
2nd speed rpm :	375
Rack travel in mm :	6.50
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	6.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Speed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm :	6.50
Tolerance mm :	+ 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Ref. pressure	
ALDA / ADA hPa :	1100
Del. quantity	
cm3/1000 strokes :	33.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Speed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	8.50
Rated speed rpm :	2500

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	900
CRT mm max. :	1.45

LOW IDLE

control lever	
position degree :	14.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	
Rated speed rpm :	375
rack travel mm :	6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm :	450
rack travel mm :	1.90
Tolerance mm :	+ 0.10

rack travel mm :	2.50
Rated speed rpm :	670
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 11.00

Rated speed rpm :	900
CRT mm max. :	1.45

rack travel mm :	6.50
Rated speed rpm :	375

TORQUE CONTROL

Rated speed rpm :	900
rack travel mm :	12.35
Tolerance mm :	+ 0.05

Rated speed rpm :	1400
rack travel mm :	12.05
Tolerance mm :	+ 0.10

Rated speed rpm :	2300
rack travel mm :	11.40

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 33.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Spreed
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA)
(PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 8.90
Tolerance mm : \pm 0.80
Vacuum hPa : 400.0
Vacuum hPa : -

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.11.94
Test oil : ISO 4113

Combination No. : 0400074882

Injection pump
Pump designation : PES4M55C32ORS184
EP type number : 0410054938

Governor
Governor design. : RSF375/1700M77-1
Governor no. : 0420021275

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 50.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 4.5

x inside diameter : 2.0

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x length mm : 434

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00
Tolerance mm : + 1.00

Firing order : 1- 5- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 16.5
Tolerance : + 0.20
Check
tolerance *NW : + 0.30

BASIC SETTING

Rated speed rpm : 1700

Rack travel in mm : 11.50
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 39.0

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1700

Ref. pressure

ALDA / ADA hPa : -

Del. quantity

cm³/1000 strokes : 39.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 6.70

Rated speed rpm : 2000

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2300

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450

rack travel mm : 5.60

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 10.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1700

rack travel mm : 11.50

Tolerance mm : ± 0.05

Rated speed rpm : 1000

rack travel mm : 11.50

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2000
rack travel mm : 6.70
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 54.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 7.30
Tolerance mm : \pm 0.80
Vacuum hPa : 400.0
Vacuum hPa : -

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.94
Test oil : ISO 4113
Combination No. : 0401840777
Injection pump
Pump designation : PE12P120A520/4LS3840
EP type number : 0411820724
Governor
Governor design. : RQV250...900PA1198
Governor no. : 0421814117

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2842LE
Power KW : 440.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089
Outside diameter : 8.0

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x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 5.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 201.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : + 4.0

rack travel mm : 10.40
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1050
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 2.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm min. : > 9.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.40
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 150

Check
speed 1/min : < 170

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 945
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.11.94
Test oil : ISO 4113

Combination No. : 0402640838

Injection pump
Pump designation : PE12P120A520LS7829
: -1
EP type number : 0412620827

Governor
Governor design. : RQV300...1150PA1039
: -1K
Governor no. : 0421815315

Cust. part No. : 3-7226

Customer-spec. information
Customer : MAN
Motor : D2842LE401
Power KW : 735.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.85

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 305.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.24
Tolerance mm : + 0.25

Rated speed rpm : 1206
guide sleeve
travel mm : 10.42
Tolerance mm : + 0.25

Rated speed rpm : 795
guide sleeve
travel mm : 6.88
Tolerance mm : + 0.25

Rated speed rpm : 329
guide sleeve
travel mm : 2.75
Tolerance mm : + 0.25

Rated speed rpm : 379
guide sleeve
travel mm : 3.53
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 4.21
Tolerance mm : + 0.25

Rated speed rpm : 1450
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1280

Rack travel in mm : 12.80
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 305.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 12.80
Rated speed rpm : 1203
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 8.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1300
rack travel mm : 13.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1150

Pressure hPa : 850
rack travel mm : 12.55
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : 10.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 257.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1203
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113

Combination No. : 0402640839

Injection pump
Pump designation : PE12P120A520LS7829
: -1
EP type number : 0412620827

Governor
Governor design. : RQV300...1150PA1039K
Governor no. : 0421815314

Cust. part No. : 3-7227

Customer-spec. information
Customer : MAN
Motor : D2842LE402
Power KW : 809.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 338.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.24
Tolerance mm : \pm 0.25

Rated speed rpm : 1206
guide sleeve
travel mm : 10.43
Tolerance mm : \pm 0.25

Rated speed rpm : 795
guide sleeve
travel mm : 6.88
Tolerance mm : \pm 0.25

Rated speed rpm : 329
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 379
guide sleeve
travel mm : 3.53
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 4.21
Tolerance mm : \pm 0.25

Rated speed rpm : 1450
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

A20

control lever
position degree : - 1
Rated speed rpm : 1265

Rack travel in mm : 13.70
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 338.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : \pm 4.0

rack travel mm : 13.80
Rated speed rpm : 1203
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : > 8.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 14.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1150

Pressure hPa : 850
rack travel mm : 12.55
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : 10.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80

A21

Rated speed rpm : < 240
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 0.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1203
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.94
Test oil : ISO 4113

Combination No. : 0402746809

Injection pump
Pump designation : PES6P120A720RS7132
EP type number : 0412726806

Governor
Governor design. : RQ750PA836
Governor no. : 0421801373

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : EAGLE LE
Power KW : 240.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 2.5

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x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed ~rpm : 700

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 279.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 761
guide sleeve
travel mm : 4.04
Tolerance mm : + 0.25

Rated speed rpm : 920
guide sleeve
travel mm : 42.18
Tolerance mm : + 0.25

Rated speed rpm : 800
guide sleeve
travel mm : 8.98
Tolerance mm : + 0.25

Rated speed rpm : 807
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 279.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 31.0
tolerance degree : + 4.0

control lever
position degree : 94.0
tolerance degree : + 4.0

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 250.0
Tolerance
cm3/1000 strokes : + 15.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.94
Test oil : ISO 4113

Combination No. : 0402746967

Injection pump
Pump designation : PES6P120A320RS7324
EP type number : 0412726905

Governor
Governor design. : RQ300/1200PA1132
Governor no. : 0421801708

Cust. part No. : 51.11103-7296

Customer-spec. information

Customer : MAN
Motor : D0826LF11/LFL03
Power KW : 162.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
°NW after s.o.d. : 1.0

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : + 8.0

Check tolerance
cm³/1000S. : + 11.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 1000

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 199.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.41
Tolerance mm : + 0.10

Rated speed rpm : 1257
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 425
guide sleeve
travel mm : 4.31
Tolerance mm : + 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 1430
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 199.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

rack travel mm : 11.50
Rated speed rpm : 1245
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1328
Tolerance 1/min : \pm 15

rack travel mm : 0.25
Tolerance mm : \pm 0.25
Rated speed rpm : 1460

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : \pm 30

Rated speed rpm : 250

CRT mm min. : $>$ 6.50

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 11.25
Tolerance mm : \pm 0.15

Pressure hPa : 140
rack travel mm : 8.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : + 20.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1245
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.00
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.20

A28

Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.94
Test oil : ISO 4113

Combination No. : 0402746984

Injection pump
Pump designation : PES6P120A320RS7324
EP type number : 0412726905

Governor
Governor design. : RQV300...1200PA1131
Governor no. : 0421814088

Cust. part No. : 51.11103-7330

Customer-spec. information

Customer : MAN
Motor : D0826LF11/LFL03
Power KW : 162.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 207.0
Tolerance bar : ± 3.0

Lube oil : 1409918004

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
°NW after s.o.d. : 1.0

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : + 8.0

Check tolerance
cm³/1000S. : + 11.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 1000

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 199.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

B02

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : + 0.25

Rated speed rpm : 1263
guide sleeve
travel mm : 10.49
Tolerance mm : + 0.25

Rated speed rpm : 806
guide sleeve
travel mm : 5.85
Tolerance mm : + 0.25

Rated speed rpm : 347
guide sleeve
travel mm : 2.36
Tolerance mm : + 0.25

Rated speed rpm : 397
guide sleeve
travel mm : 1.01
Tolerance mm : + 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.37
Tolerance mm : + 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1320

Rack travel in mm : 11.45
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : + 4.0

rack travel mm : 11.45
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : + 15

rack travel mm : 0.25
Tolerance mm : + 0.25
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.45
Tolerance mm : + 0.05

Rated speed rpm : 1200
rack travel mm : 12.45

Tolerance mm : + 0.10
Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 11.25
Tolerance mm : + 0.15

Pressure hPa : 0
rack travel mm : 8.25
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 240
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 11.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1500

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : ± 20.0

BREAKAWAY

Rack travel in mm : 11.45
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.00
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.12.94
Test oil : ISO 4113

Combination No. : 0402046859

Injection pump
Pump designation : PES6P110A320LS3330
EP type number : 0412016745

Governor
Governor design. : RQV350...1150PA1129K
Governor no. : 0421815385

Cust. part No. : 1823109C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-466
Power KW : 141.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413076

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 250
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 130.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Anaroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 130.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : \pm 6.0

rack travel mm : 12.10
Rated speed rpm : 1200
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.85
Tolerance mm : \pm 0.10

Rated speed rpm : 275

CRT mm min. : $>$ 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 350
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Pressure hPa : 180
rack travel mm : 11.80
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 280
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 145.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1200
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.94
Test oil : ISO 4113
Combination No. : 0402746980
Injection pump
Pump designation : PES6P120A320LS7328
EP type number : 0412726908
Governor
Governor design. : RQV350...1250PA1136K
Governor no. : 0421815402
Cust. part No. : 1823108C91

Customer spec. information
Customer : NAVISTAR
Motor : DTA-408
Power KW : 171.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413076

Inlet press. bar : 2.8

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

B08

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1440

Rack travel in mm : 12.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 120.0
tolerance degree : ± 6.0

rack travel mm : 12.30

B09

Rated speed rpm : 1320
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 6.0

control lever
position degree : 16.5
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 1.70
Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.35
Tolerance mm : ± 0.05

Rated speed rpm : 850
rack travel mm : 12.50
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1500
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 970
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Pressure hPa : 435
rack travel mm : 11.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 280
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.30

B10

Rated speed rpm : 1320
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 30.0

Note remarks

Edition : 12.12.94
Test oil : ISO 4113

Injection pump
Pump designation : PES6MW100/120RS1137
: -3
EP type number : 0413406236

Governor
Governor design. : RSV550...1100MW2A335
: -8
Governor no. : 0420085244

Cust. part No. : 392 9184

Customer : CDC
Motor : 6CTA-830/2188E
Power KW : 209.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Test nozzle holde
assembly : 1688901101

Opening pressure : 208.5
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 31.0
Tolerance bar : \pm 1.0

Prestroke mm	:	3.55
Tolerance mm	:	+ 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Time to cyl. no. : 1

*NW after s.o.d. : 9.0

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 9.0

Rated speed rpm : 1100

Rack travel in mm : 14.60
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 172.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 550

Rack travel in mm : 6.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.55
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 172.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 92.0
tolerance degree : + 4.0

rack travel mm : 13.60
Rated speed rpm : 1180
Tolerance 1/min : + 5

rack travel mm : .00
Rated speed rpm : 1270
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 6.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.60
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 15.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1000
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 15.40
Tolerance mm : \pm 0.20

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 620
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 470
rack travel mm : 12.10
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1180
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
rack travel mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.10.91
Test oil : ISO 4113

Combination No. : 0400866145AK

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9410230025

Governor
Governor design. : RSV400...1100A0C2190
: -35R
Governor no. : 0420233242

Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6 C 8.3 L
Power KW : 112.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901017

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

RATED SPEED

control lever
position degree : 99.0
tolerance degree : + 4.0

rack travel mm : 10.40
Rated speed rpm : 1245
Tolerance 1/min : + 5

B15

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.90

Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 550
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.35
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : + 0.10

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1245
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402648836

Injection pump
Pump designation : PE8P120A920/4LS7125
: -10T
EP type number : 0412628890

Governor
Governor design. : RQV200...950PA736-4
Governor no. : 0421813646

Cust. part No. : 397963

Customer-spec. information
Customer : SAAB-SCANIA
Motor : DSC14 03 L09,L10

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5

B17

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Del. quantity
cm3/1000 strokes : 222.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spread
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 222.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 115.0
tolerance degree : + 4.0

rack travel mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

B18

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 225
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 6.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 325
rack travel mm : 11.50
Tolerance mm : + 0.10

Pressure hPa : 445
rack travel mm : 12.95
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm3/1000 strokes : 215.0

Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.09.94
Test oil : ISO 4113

Combination No. : 0400074880

Injection pump
Pump designation : PES4M55C320RS186
EP type number : 0410064007

Governor
Governor design. : RSF375/2300M75-1
Governor no. : 0420021163

Cust. part No. :

Customer spec. information
Customer : MB-PKW
Motor : OM601-ECE(W202)
Power KW : 55.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

B20

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 16.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 36.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 6.60

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 36.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 11.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 1.80

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 11.00

Rated speed rpm : 1000

CRT mm max. : 1.95

rack travel mm : 6.60

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.95

Tolerance mm : ± 0.05

Rated speed rpm : 1600

rack travel mm : 12.50

Tolerance mm : ± 0.10

Rated speed rpm : 2300

rack travel mm : 11.80

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1600
Del. quantity
cm³/1000 strokes : 36.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Spreed
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.80
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.2
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA)
(PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 9.00
Tolerance mm : \pm 0.80
Vacuum hPa : 400.0
Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 11.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000
rack travel mm : -1.70
Tolerance mm : \pm 0.15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.09.94
Test oil : ISO 4113

Combination No. : 0400074881

Injection pump
Pump designation : PES4M55C32ORS186
EP type number : 0410064007

Governor
Governor design. : RSF375/2300M56-12
Governor no. : 0420021169

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM601-D 20
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 16.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 36.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 6.60

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 36.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 8.80

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 10.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.80

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 11.00

Rated speed rpm : 1000

CRT mm max. : 1.95

rack travel mm : 6.60

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.95

Tolerance mm : ± 0.05

Rated speed rpm : 1600

rack travel mm : 12.50

Tolerance mm : ± 0.10

Rated speed rpm : 2300

rack travel mm : 11.80

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1600
Del. quantity
cm³/1000 strokes : 36.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Spreed
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

INTERMEDIATE RATED SPEED

Rated speed rpm : 1000

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.80
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.2
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00

degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA)
(PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 9.00
Tolerance mm : \pm 0.80
Vacuum hPa : 400.0
Vacuum hPa : -

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 10.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.12.94
Test oil : ISO 4113

Combination No. : 0400866207

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9410230025

Governor
Governor design. : RSV400...1100A0C2190
: -79R
Governor no. : 0420233318

Cust. part No. : 3921 143

Customer-spec. information
Customer : CDC
Motor : 6 C 8.3
Power kW : 129.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
°NW after s.o.d. : 10.0

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 123.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 400

Rack travel in mm : 5.60

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

C01

control lever
position degree : 99.0
tolerance degree : ± 4.0

rack travel mm : 9.65
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.65
Tolerance mm : ± 0.05

BREAKAWAY

Rack travel in mm : 9.65
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.60

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402036747

Injection pump
Pump designation : PES6P110A120RS3296
EP type number : 0412016738

Governor
Governor design. : RQV400...1250PA1014
: -1K
Governor no. : 0421815291

Cust. part No. : 3921837

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA-A
Power kW : 130.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 59.0
tolerance degree : + 4.0

rack travel mm : 12.00
Rated speed rpm : 1300

C04

Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1455
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1580

LOW IDLE

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.30
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 525

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.05
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 11.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250

rack travel mm : 8.50
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 565
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 255
rack travel mm : 9.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 138.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 99.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.40
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0402648868

Injection pump
Pump designation : PE8P120A720LS7180
: -10

EP type number : 0412628892

Governor
Governor design. : RQV350...1050PA795
: -8
Governor no. : 0421813770

Cust. part No. : 1305130

Customer-spec. information
Customer : SCANIA
Motor : DSI 14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

Outside diameter : 6.0

C06

x inside diameter : 3.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1325

Rack travel in mm : 8.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 47.0
tolerance degree : ± 4.0

control lever
position degree : 102.0
tolerance degree : ± 4.0

rack travel mm : 12.20
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 16.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.30

Rated speed rpm : 250

CRT mm min. : > 6.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1095

C08

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0402648972

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0412628893

Governor
Governor design. : RQV350...1100PA795
: -21
Governor no. : 0421814079

Cust. part No. : 1351804

Customer-spec. information
Customer : SCANIA
Motor : DSI14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 283.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.15

Rated speed rpm : 796
guide sleeve
travel mm : 5.34
Tolerance mm : \pm 0.25

Rated speed rpm : 411
guide sleeve
travel mm : 2.06
Tolerance mm : \pm 0.25

Rated speed rpm : 461

C10

guide sleeve
travel mm : 2.64
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.19
Tolerance mm : \pm 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 14.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 48.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

rack travel mm : 13.95
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1290
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : + 0.30

Rated speed rpm : 250

CRT mm min. : > 7.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.95
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 11.40
Tolerance mm : + 0.25

Pressure hPa : 860
rack travel mm : 13.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.95
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402678824

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0412628893

Governor
Governor design. : RSV350...1100P1A512
: -5
Governor no. : 0421833437

Cust. part No. : 1357215

Customer-spec. information
Customer : SCANIA
Motor : DSC14 56A

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

C13

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : ± 4.0

control lever
position degree : 116.0
tolerance degree : ± 4.0

rack travel mm : 12.40
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 1.00
Rated speed rpm : 1225
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 4.0

control lever
position degree : 30.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.10

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : ± 30

Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 1100
rack travel mm : 12.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 223.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.94
Test oil : ISO 4113

Combination No. : 0402746922

Injection pump
Pump designation : PES6P120A720LS7238
: -10
EP type number : 0412726873

Governor
Governor design. : RQ300/1100PA1013-3
Governor no. : 0421801609

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 hLA
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.70

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.80

Rack travel in mm : 13.80

Tolerance mm : \pm 0.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 600

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1153
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.40

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 14.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 150
rack travel mm : -2.10
Tolerance mm : \pm 0.05

Pressure hPa : 350
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Pressure hPa : 800
rack travel mm : 0.20
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 222.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1153
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.95
Test oil : ISO 4113

Combination No. : 0400074778

Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0410064006

Governor
Governor design. : RSF360/1900M79
Governor no. : 0420021280

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

C19

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 17.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 60.0

<hr/>	
Tolerance	
cm3/1000 strokes	: + 0.7
<hr/>	
Check tolerance	
cm3/1000S.	: + 1.8
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm3/1000 strokes	: 3.0
<hr/>	
Check tolerance	
cm3/1000S.	: 3.5
<hr/>	
2nd speed rpm	: 360
<hr/>	
Rack travel in mm	: 6.00
Tolerance mm	: + 0.50
Del. quantity	
cm3/1000 strokes	: 6.5
Tolerance	
cm3/1000 strokes	: + 0.5
Spreed	
Tolerance	
cm3/1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm	: 6.50
Tolerance mm	: + 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
Ref. pressure	
ALDA / ADA hPa	: 1850
Del. quantity	
cm3/1000 strokes	: 60.0
Tolerance	
cm3/1000 strokes	: + 0.7
Check tolerance	
cm3/1000S.	: + 1.8
Spreed	
Tolerance	
cm3/1000 strokes	: 3.0
Check tolerance	
cm3/1000S.	: 3.5

RATED SPEED

control lever	
position degree	: 50.0
<hr/>	
rack travel mm	: 8.30
Rated speed rpm	: 2200
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.60
Rated speed rpm	: 2600

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 900
<hr/>	
CRT mm max.	: 1.95

LOW IDLE

control lever	
position degree	: 9.5
tolerance degree	: + 2.0

Setting point w/out bump r spring	
Rated speed rpm	: 360
rack travel mm	: 6.00

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 500
rack travel mm	: 4.20
Tolerance mm	: + 0.10

Load pick-up

Rated speed rpm	: 900
<hr/>	
CRT mm max.	: 1.95

rack travel mm	: 6.00
Rated speed rpm	: 360

TORQUE CONTROL

Rated speed rpm	: 900
rack travel mm	: 13.90
Tolerance mm	: + 0.05

Rated speed rpm	: 1500
rack travel mm	: 13.30
Tolerance mm	: + 0.30

Rated speed rpm	: 1900
rack travel mm	: 12.70
Tolerance mm	: + 0.35

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1600
rack travel mm : -0.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1100
rack travel mm : -2.65
Tolerance mm : \pm 0.10

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -4.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1900
Spreed
Del. quantity
cm³/1000 strokes : 56.5
Tolerance
cm³/1000 strokes : \pm 1.2
Check tolerance
cm³/1000S. : \pm 2.2
Spreed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 0.7
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

HIGH IDLE

Rated speed rpm : 2200
rack travel mm : 8.30
Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.2
Check tolerance
cm³/1000S. : \pm 3.2
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

LOW IDLE

Rated speed rpm : 360
rack travel mm : 6.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 42.00
degree : < 39.50

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 9.5
tolerance degree : \pm 2.0
Rated speed rpm : 360
Tolerance mm : \pm 0.70
Tolerance
cm³/1000 strokes : \pm 3.5
Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2600

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.01.95
Test oil : ISO 4113

Combination No. : 0400074900

Injection pump
Pump designation : PES4M55C320RS167
EP type number : 0410054960

Governor
Governor design. : RSF360/1900M70-4
Governor no. : 0420021123

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM601-2.3l
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- - 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed	
<hr/>	
Tolerance	
cm3/1000 strokes :	2.5
<hr/>	
Check tolerance	
cm3/1000S. :	3.0
<hr/>	
2nd speed rpm :	335
<hr/>	
Rack travel in mm :	5.20
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	6.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Speed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm :	6.25
Tolerance mm :	+ 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	
ALDA / ADA hPa :	1100
Del. quantity	
cm3/1000 strokes :	41.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Speed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	
Rated speed rpm :	2100

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	< 1.45

LOW IDLE

control lever	
position degree :	13.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	
Rated speed rpm :	335
rack travel mm :	5.20

SET IDLE AUXILIARY SPRING

Rated speed rpm :	400
rack travel mm :	1.00
Tolerance mm :	+ 0.10

rack travel mm :	2.50
Rated speed rpm :	600
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 7.50

Rated speed rpm :	1000
CRT mm max. :	< 1.45

rack travel mm :	5.20
Rated speed rpm :	335

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.85
Tolerance mm :	+ 0.05

Rated speed rpm :	1400
rack travel mm :	12.35
Tolerance mm :	+ 0.15

Rated speed rpm :	1900
rack travel mm :	11.55

Tolerance mm : \pm 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 12.55
Tolerance mm : \pm 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 40.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1900

Spreed
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 36.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 39.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2100
rack travel mm : 7.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed

Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 13.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.00
Tolerance mm : \pm 0.70
Del. quantity
cm3/1000 strokes : 37.5
Tolerance
cm3/1000 strokes : \pm 4.0

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2500

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.01.95
Test oil : ISO 4113

Combination No. : 0400074911

Injection pump
Pump designation : PES4M55C320RS163
EP type number : 0410054961

Governor
Governor design. : RSF360/2300M60-6
Governor no. : 0420021091

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 (2.0)
Power KW : 52.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00
Tolerance mm : + 1.00

Firing order : 1- - 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 17.5
Tolerance : + 0.20
Check
tolerance *NW : + 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 335

Rack travel in mm : 5.10

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : + 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : + 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 32.0

Tolerance

cm³/1000 strokes : + 0.5

Check tolerance

cm³/1000S. : + 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.00

Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : < 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : + 2.0

Setting point w/out bumper spring

Rated speed rpm : 335

rack travel mm : 5.10

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 7.90

Tolerance mm : + 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 8.50

Rated speed rpm : 1000

CRT mm max. : < 1.95

rack travel mm : 5.10

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 11.15

Tolerance mm : + 0.05

Rated speed rpm : 1800

rack travel mm : 10.60

Tolerance mm : + 0.10

Rated speed rpm : 2200

rack travel mm : 10.10

Tolerance mm : + 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 34.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
Spreed
Del. quantity
cm³/1000 strokes : 32.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

D01

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 7.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.10
Del. quantity
cm³/1000 strokes : 55.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 12.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 12.70
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 34.5
Tolerance
cm³/1000 strokes : \pm 4.0

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2950

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.01.95
Test oil : ISO 4113

Combination No. : 0400074926

Injection pump
Pump designation : PES4M55C320RS161
EP type number : 0410054964

Governor
Governor design. : RSF375/2300M56-3
Governor no. : 0420021056

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM601-LVP
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

D03

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 18.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 32.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 5.30

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : -

Del. quantity

cm³/1000 strokes : 32.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.30

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 15.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 7.30

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 10.00

Rated speed rpm : 1000

CRT mm max. : 1.95

rack travel mm : 5.30

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 11.35

Tolerance mm : ± 0.05

Rated speed rpm : 1800

rack travel mm : 11.00

Tolerance mm : ± 0.10

Rated speed rpm : 2250

rack travel mm : 10.40

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 930
rack travel mm : - 0.3
Tolerance mm : +- 0,2

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 840
rack travel mm : -1.20
Tolerance mm : +- 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 700
rack travel mm : -2.50
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 35.3
Tolerance
cm³/1000 strokes : +- 0.8
Check tolerance
cm³/1000S. : +- 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2250
Spreed
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

D05

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 7.30
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.30
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : +- 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA)
(PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 7.60
Tolerance mm : \pm 0.80
Vacuum hPa : 400.0
Vacuum hPa : -

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 15.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.94
Test oil : ISO 4113

Combination No. : 0401876800

Injection pump
Pump designation : PE6P120A320RS3313
EP type number : 0411826807

Governor
Governor design. : RSV350...1050P8A558
: -1
Governor no. : 0421833423

Cust. part No. : 1351267

Customer-spec. information
Customer : SCANIA
Motor : D9

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with RO80 diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 160.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.90
Tolerance mm : + 0.30

Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 160.0

D08

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

RATED SPEED

control lever
position degree : 56.0
tolerance degree : + 4.0

control lever
position degree : 106.0
tolerance degree : + 4.0

rack travel mm : 10.10
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 1.00
Rated speed rpm : 1170
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70

Testing:

Rated speed rpm : 350
rack travel mm : 4.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 535
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 11.95
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.50
Tolerance mm : \pm 0.15

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 210
rack travel mm : 10.70
Tolerance mm : \pm 0.15

Pressure hPa : 280
rack travel mm : 11.15
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Note remarks

Cust. part No. : 3921971

Customer : CUMMINS
Motor : 6CTA-A
Power KW : 168.0

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY DIFFERENCE

```

* $\Delta$ NW after s.o.d. :      5.5
Tolerance           : + 0.10
Check
tolerance * $\Delta$ NW     : + 0.23

```

Rated speed rpm : 1100

Rack travel in mm : 15.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 112.0
tolerance degree : + 4.0

control lever
position degree : 59.0

tolerance degree : + 4.0

rack travel mm : 14.20
Rated speed rpm : 1220
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1395
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 16.0
tolerance degree : + 4.0

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.45
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 14.30
Tolerance mm : + 0.20

Rated speed rpm : 1150
rack travel mm : 15.30
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 14.10
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 15.45
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 600
rack travel mm : 13.80
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 10.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 156.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 1220
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402036750

Injection pump
Pump designation : PES6P110A120RS3286
EP type number : 0412016737

Governor
Governor design. : RQV350...1150PA1014
: -3K
Governor no. : 0421815298

Cust. part No. : 3921972

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 156.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 5.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.65
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 144.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 144.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 109.0
tolerance degree : + 4.0

control lever
position degree : 56.0

tolerance degree : + 4.0

rack travel mm : 13.40
Rated speed rpm : 1225
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

control lever
position degree : 67.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.65
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.60
Tolerance mm : + 0.10

Rated speed rpm : 1150
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 13.40
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.65
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 600
rack travel mm : 13.80
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 10.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1225
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402036751

Injection pump
Pump designation : PES6P110A120RS3286
EP type number : 0412016737

Governor
Governor design. : RQV350...1200PA1014
: -4K
Governor no. : 0421815299

Cust. part No. : 3921973

Customer-spec. information

Customer : CDC
Motor : 6CTA-A
Power KW : 156.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 142.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 142.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 58.0
tolerance degree : + 4.0

rack travel mm : 13.30
Rated speed rpm : 1275
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1415

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.55
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.50
Tolerance mm : + 0.10

Rated speed rpm : 1150
rack travel mm : 14.40
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 13.30
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.55
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 475
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 215
rack travel mm : 10.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.30

Rated speed rpm : 1275
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.95
Test oil : ISO 4113

Combination No. : 0402046840

Injection pump
Pump designation : PES6P120A320RS3307
EP type number : 0412026757

Governor
Governor design. : RQV250...950PA794-3
Governor no. : 0421814015

Cust. part No. : 0X7232

Customer-spec. information
Customer : PERKINS
Motor : EAGLE TX 300/335

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 1.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 224.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 250

Rack travel in mm : 4.10
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 15.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 5.0

Spreed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.12
Tolerance mm : + 0.10

Rated speed rpm : 998
guide sleeve
travel mm : 7.50
Tolerance mm : + 0.10

Rated speed rpm : 303
guide sleeve
travel mm : 1.79
Tolerance mm : + 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 2.24
Tolerance mm : + 0.25

Rated speed rpm : 660
guide sleeve
travel mm : 3.96

Tolerance mm : + 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1110

Rack travel in mm : 11.30
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 224.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 117.0
tolerance degree : + 4.0

rack travel mm : 11.30
Rated speed rpm : 985
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 150
CRT mm min. : $>$ 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 400
rack travel mm : 9.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 220
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Pressure hPa : 340
rack travel mm : 11.55
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 170
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 106.5
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 985
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.01.95
Test oil : ISO 4113

Combination No. : 0402046865B

Injection pump
Pump designation : PES6P120A320LS3321
: -1
EP type number : 0412026776

Governor
Governor design. : RQ275...1100PA1085
: -1
Governor no. : 0421801761

Cust. part No. :

Customer-spec. information
Customer : RABA
Motor : SIEHE BEMERKUNG

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 1.10

Rack travel in mm : 12.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 9.50
Tolerance mm : + 0.30

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.76
Tolerance mm : + 0.10

Rated speed rpm : 1116
guide sleeve
travel mm : 7.85
Tolerance mm : + 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 387
guide sleeve
travel mm : 3.58
Tolerance mm : + 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1240
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure

hPa : -

Del. quantity
cm3/1000 strokes : 198.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 47.0
tolerance degree : + 4.0

control lever
position degree : 109.0
tolerance degree : + 4.0

rack travel mm : 13.00
Rated speed rpm : 1150
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 6.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : \pm 20

Rated speed rpm : 175
CRT mm min. : $>$ 8.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 120
rack travel mm : 12.10
Tolerance mm : \pm 0.15

Pressure hPa : 340
rack travel mm : 13.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 9.50
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.94
Test oil : ISO 4113

Combination No. : 0402646792

Injection pump
Pump designation : PE6P120A320LS7854
EP type number : 0412626872

Governor
Governor design. : RQV350...1050PA1051
Governor no. : 0421814036

Cust. part No. : 0230746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.80
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.22
Tolerance mm : \pm 0.10

Rated speed rpm : 1108
guide sleeve
travel mm : 9.64
Tolerance mm : \pm 0.10

Rated speed rpm : 403
guide sleeve
travel mm : 1.97
Tolerance mm : \pm 0.25

Rated speed rpm : 453

guide sleeve
travel mm : 2.52
Tolerance mm : \pm 0.25

Rated speed rpm : 770
guide sleeve
travel mm : 4.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 14.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT F L LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 105.0
tolerance degree : \pm 4.0

rack travel mm : 12.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : \pm 20

Rated speed rpm : 250

CRT mm min. : $>$ 8.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 10.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 275
Rated speed rpm : 500
rack travel mm : 0.85

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 580
rack travel mm : 2.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 270

Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736803
Injection pump
Pump designation : PES6P110A12ORS7187
EP type number : 0412716801
Governor
Governor design. : RQV350...1100PA924
: -3K
Governor no. : 0421815228
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6CTA

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413047
Overflow quantity
min. l/h : 165
Tolerance l/h : ± 5.0
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 4.40
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 7.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 9.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : + 4.0

rack travel mm : 9.40
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00

E04

Rated speed rpm : 1215
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : + 0.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.45
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 10.20
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 4.95
Tolerance mm : + 4.95

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 900
rack travel mm : 10.45
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 6.90
Tolerance mm : + 0.20

Rated speed rpm : 1100
Pressure hPa : 330
rack travel mm : 8.60
Tolerance mm : \pm 0.20

Pressure hPa : 200
rack travel mm : 7.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736805
Injection pump
Pump designation : PES6P120A120RS7206
EP type number : 0412726835
Governor
Governor design. : RQV350...1100PA924
: -5K
Governor no. : 0421815250
Cust. part No. : 3281182

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Overflow quantity
min. l/h : 165
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 7.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 115.0
tolerance degree : ± 4.0

rack travel mm : 11.10
Rated speed rpm : 1145

E07

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 1.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 11.20
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 300
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 11.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10

EO8

Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94

Test oil : ISO 4113

Combination No. : 0402736811

Injection pump

Pump designation : PES6P110A120RS7213

EP type number : 0412716804

Governor

Governer design. : RQV400...1250PA964

: -3K

Governer no. : 0421815255

Cust. part No. : 3921776

Customer spec. information

Customer : CDC

Motor : 6BTA-A

Power KW : 147.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 5.0

Test nozzle holder

assembly : 1688901101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking

Barrel no. : 1

°NW after s.o.d. : 6.0

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 159.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 159.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : + 4.0

rack travel mm : 13.80
Rated speed rpm : 1295

E10

Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 16.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250

rack travel mm : 8.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 755
rack travel mm : 13.90
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 10.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 159.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.40
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736812

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0412716805

Governor
Governor design. : RQV350...1200PA964
: -4K
Governor no. : 0421815256

Cust. part No. : 3921774

Customer-spec. information

Customer : CDC
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 1.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 5.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 148.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : \pm 4.0

rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 5.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 275
CRT mm min. : $>$ 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1200
rack travel mm : 7.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1200

Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736823

Injection pump
Pump designation : PES6P110A120RS7249
EP type number : 0412716807

Governor
Governor design. : RQV350...1150PA964
: -9K
Governor no. : 0421815295

Cust. part No. : 3921970

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 179.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 179.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 65.0
tolerance degree : + 4.0

rack travel mm : 13.30
Rated speed rpm : 1205

Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 11.80
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.35
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150

rack travel mm : 8.10
Tolerance mm : + 0.20

Rated speed rpm : 1150

Pressure hPa : 860
rack travel mm : 13.40
Tolerance mm : + 0.20

Pressure hPa : 320
rack travel mm : 9.65
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 168.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1205
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.40
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736829

Injection pump
Pump designation : PES6P120A120RS7261
EP type number : 0412726876

Governor
Governor design. : RQV350...1100PA924
: -7K
Governor no. : 0421815317

Cust. part No. : 3281842

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 7.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 57.0
tolerance degree : ± 4.0

control lever
position degree : 115.0

tolerance degree : ± 4.0

rack travel mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.55
Tolerance mm : ± 0.15

Rated speed rpm : 500
rack travel mm : 10.55
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 320
rack travel mm : 8.30
Tolerance mm : \pm 0.20

Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

E20

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736830

Injection pump
Pump designation : PES6P110A120RS7263
EP type number : 0412716808

Governor
Governor design. : RQV350...1250PA964
 : -11K
Governor no. : 0421815321

Cust. part No. : 3281780

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 6.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.85

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.94
Tolerance mm : \pm 0.25

Rated speed rpm : 1316
guide sleeve
travel mm : 8.13
Tolerance mm : \pm 0.25

Rated speed rpm : 826
guide sleeve
travel mm : 4.51
Tolerance mm : \pm 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 1.77
Tolerance mm : \pm 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 2.42
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 2.82
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0

tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 250
CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : + 0.10

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 11.65
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
Tolerance mm : + 0.20

Rated speed rpm : 1250

Pressure hPa : 570
rack travel mm : 11.30
Tolerance mm : + 0.20

Pressure hPa : 775
rack travel mm : 13.15
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736831
Injection pump
Pump designation : PES6P120A120RS7261
EP type number : 0412726876
Governor
Governor design. : RQV350...1100PA924
: -8K
Governor no. : 0421815318
Cust. part No. : 3281841

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 176.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 7.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 113.0
tolerance degree : ± 4.0

rack travel mm : 9.60
Rated speed rpm : 1145

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 1.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 10.00
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 10.35
Tolerance mm : ± 0.15

Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100

Pressure hPa : 900
rack travel mm : 10.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 320
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 10.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736856
Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0412716804
Governor
Governor design. : RQV350...1250PA964
: -11K
Governor no. : 0421815426
Cust. part No. : 3282240

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 158.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.94
Tolerance mm : \pm 0.25

Rated speed rpm : 1346
guide sleeve
travel mm : 8.44
Tolerance mm : \pm 0.25

Rated speed rpm : 840
guide sleeve
travel mm : 4.58
Tolerance mm : \pm 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 1.77
Tolerance mm : \pm 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 2.53
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 2.76
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

F01

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 158.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.10
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 16.20
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 13.50
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1800
rack travel mm : 16.10
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 450
rack travel mm : 10.85
Tolerance mm : \pm 0.20

Pressure hPa : 1150
rack travel mm : 14.35
Tolerance mm : \pm 0.05

START CUT-OUT

F02

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736858

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0412716805

Governor
Governor design. : RQV350...1200PA964
 : -28K
Governor no. : 0421815428

Cust. part No. : 3282464

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 1.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 5.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 148.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.80
Tolerance mm : + 0.20

Rated speed rpm : 1200
guide sleeve
travel mm : 9.10
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.30
Tolerance mm : + 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 6.10
Tolerance mm : + 0.20

Rated speed rpm : 1400
guide sleeve
travel mm : 10.90
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : + 4.0

rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1200
rack travel mm : 7.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1200

Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

Note remarks

Edition : 12.12.94
Test oil : ISO 4113

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0402716805

Governor
Governor design. : RQV350...1200PA964
: -29K
Governor no. : 0421815430

Customer-spec. information

Customer : CDC
Motor : 6CTA-A
Power KW : 187.0

temp. °C : 40
Tolerance °C : + 2.0

Inlet press. bar : 1.5

Overflow quantity
min. L/h : 120
Tolerance L/h : \pm 5.0

Opening pressure : 208.5
Tolerance bar : \pm 1.5

x inside diameter : 2.0
x length mm : 600

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

Prestroke mm : 0.40
Tolerance mm : \pm 0.05

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.30
Check
tolerance °NW : + 0.50

```

*NW after s.o.d. : 5.5
Tolerance : + 0.10
Check
tolerance *NW : + 0.23

Rated speed rpm : 1200

Rack travel in mm : 14.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1410
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1200
rack travel mm : 7.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1200

Pressure hPa : 860
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 320
rack travel mm : 9.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

F09

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736861
Injection pump
Pump designation : PES6P120A120RS7261
EP type number : 0412726876
Governor
Governor design. : RQV350...1100PA924
: -11K
Governor no. : 0421815431
Cust. part No. : 3282468

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 7.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 57.0
tolerance degree : ± 4.0

control lever
position degree : 115.0

tolerance degree : ± 4.0

rack travel mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.55
Tolerance mm : ± 0.15

Rated speed rpm : 500
rack travel mm : 10.55
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 320
rack travel mm : 8.30
Tolerance mm : \pm 0.20

Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

Note remarks

Edition : 12.12.94
Test oil : ISO 4113

Injection pump
Pump designation : PES6P120A120RS7206
EP type number : 0412726835

Governor
Governor design. : RQV350...1100PA924
: -12K
Governor no. : 0412815433

```
Customer-spec. information
Customer      : CUMMINS
Motor         : 6CTAA
Power KW      : 202.0
```

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow quantity
min. l/h : 165
Tolerance l/h : \pm 5.0

Opening pressure
bar : 208.5
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 18.0
Tolerance bar : \pm 1.0

Prestroke mm	:	3.55
Tolerance mm	:	+ 0.05

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.30
Check
tolerance °NW : + 0.50
```

S.o.d. blocking
Barrel no. : 1

```

°NW after s.o.d. : 7.5
Tolerance : +- 0.10
Check
tolerance °NW : +- 0.23

```

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 57.0
tolerance degree : ± 4.0

control lever
position degree : 115.0

tolerance degree : ± 4.0

rack travel mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 11.20
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 300
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 11.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.01.95
Test oil : ISO 4113

Combination No. : 0402746649

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 041272695

Governor
Governor design. : RQ275/1050PA1217
Governor no. : 0421801782

Cust. part No. : CCEP 5150 66
: -225/228

Customer-spec. information
Customer : RVI
Motor : MIDR062045 I-B41
Power KW : 185.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750008

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Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : -6.70
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 276.0
tolerance degree : ± 4.0

rack travel mm : -1.00
Rated speed rpm : 1130
Tolerance 1/min : ± 5

rack travel mm : -8.55
Rated speed rpm : 1235
Tolerance 1/min : ± 15

rack travel mm : -12.10
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 200

CRT mm max. : < -5.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.75
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : -1.30
Tolerance mm : \pm 0.15

Pressure hPa : 240
rack travel mm : -0.60
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 195
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -6.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402936001

Injection pump
Pump designation : PES6P120A320/3RS8012
EP type number : 0412926017

Governor
Governor design. : RQV350...1100PA964
: -1K
Governor no. : 0421815253

Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6CTA US 94
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413064

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 113.0

Tolerance
cm³/1000 strokes : ± 1.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 9.0
 2nd speed rpm : 350
 Rack travel in mm : 9.50
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 27.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Spread
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1310
 Rack travel in mm : 9.00
 Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 113.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Spread
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 9.0

RATED SPEED

control lever
 position degree : 69.0
 tolerance degree : + 4.0
 control lever
 position degree : 118.0
 tolerance degree : + 4.0

rack travel mm : 11.00
 Rated speed rpm : 1145
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1265
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1380

LOW IDLE

control lever
 position degree : 66.0
 tolerance degree : + 4.0

control lever
 position degree : 11.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 550
 rack travel mm : 5.10
 Tolerance mm : + 0.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.05
 Tolerance mm : + 0.05

Rated speed rpm : 850
 rack travel mm : 13.30
 Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
 Pressure hPa : 1200
 rack travel mm : 12.05
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 200
rack travel mm : 10.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : \pm 1.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94

Test oil : ISO 4113

Combination No. : 0402936002

Injection pump

Pump designation : PES6P120A120RS8013

EP type number : 0412726018

Governor

Governer design. : RQV400...1250PA964K

Governer no. : 0421815252

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor : 68TA US 94

Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2417413064

Inlet press. bar : 2.5

Test nozzle holde assembly

: 1688901103

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05

Tolerance mm : ± 0.05

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1470

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

RATED SPEED

control lever
position degree : 56.0
tolerance degree : \pm 4.0

control lever
position degree : 113.0
tolerance degree : \pm 4.0

rack travel mm : 11.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : \pm 0.10

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CONTINUOUS-ACTION CONTROL

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1250

Pressure hPa : 200
rack travel mm : 9.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113
Combination No. : 0401840776
Injection pump
Pump designation : PE12P120A520/4LS3854
: -1
EP type number : 0411820730
Governor
Governor design. : RQ900PA1196
Governor no. : 0421801753

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2842LE
Power KW : 260.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 90.0
tolerance degree : ± 4.0

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.50
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 300

rack travel mm : 4.20

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646749

Injection pump
Pump designation : PE6P120A320LS7837
: -10
EP type number : 0412626855

Governor
Governor design. : RQ300/1050PA993-13
Governor no. : 0421801779

Cust. part No. : 0260744002

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.85
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.34
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 413
guide sleeve
travel mm : 4.55
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : \pm 4.0

rack travel mm : 14.10
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.10

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1098

Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113

Combination No. : 0402646750

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0412626854

Governor
Governor design. : RQ300/1050PA1031-21
Governor no. : 0421801772

Cust. part No. : 0260743202

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750075

G02

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes	: 190.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 5.80
Tolerance mm	: ± 0.30
Del. quantity	
cm ³ /1000 strokes	: 19.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
<hr/>	
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 800
Del. quantity	
cm ³ /1000 strokes	: 190.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	

Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 96.0
tolerance degree	: ± 4.0

rack travel mm	: 12.00
Rated speed rpm	: 1098
Tolerance 1/min	: ± 8

rack travel mm	: 4.00
Rated speed rpm	: 1190
Tolerance 1/min	: ± 15

rack travel mm	: 0.75
Tolerance mm	: ± 0.75
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 69.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 300
rack travel mm	: 3.50
Tolerance mm	: ± 0.10

rack travel mm	: 2.00
Rated speed rpm	: 350
Tolerance 1/min	: ± 20

Rated speed rpm	: 200
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CRT mm min.	: > 5.10
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TORQUE CONTROL

Rated speed rpm	: 1050
rack travel mm	: 13.00
Tolerance mm	: ± 0.05

Rated speed rpm	: 550
rack travel mm	: 13.00
Tolerance mm	: ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 800
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 200
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 12.25
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 800
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 3.0

G04

Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113
Combination No. : 0402646751
Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0412626853
Governor
Governor design. : RQ300/1050PA1031-20
Governor no. : 0421801774

Cust. part No. : 0260743402

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.93
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.83
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 732

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 430
guide sleeve
travel mm : 4.39
Tolerance mm : \pm 0.10

Rated speed rpm : 540
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 829
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.20
Rated speed rpm : 1098

Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + 15
 rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.50
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 6.10

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 14.20
 Tolerance mm : + 0.05

Rated speed rpm : 550
 rack travel mm : 14.20
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 800
 rack travel mm : 14.20
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 400
 rack travel mm : 10.50

Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 200
 rack travel mm : 11.65
 Tolerance mm : + 0.20

Pressure hPa : 350
 rack travel mm : 13.10
 Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
 speed 1/min : > 80

Rated speed rpm : < 220

Check
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 750
 Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 150.0
 Tolerance
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 4.5

Aneroid pressure
 hPa : 800
 Rated speed rpm : 550
 Del. quantity
 cm³/1000 strokes : 197.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 127.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.94
Test oil : ISO 4113

Combination No. : 0402646904

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0412626929

Governor
Governor design. : RQV300...900PA795
: -10
Governor no. : 0421813846

Cust. part No. : 1305081

Customer-spec. information
Customer : SCANIA
Motor : DS11

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 970

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 50.0
tolerance degree : ± 4.0

control lever
position degree : 108.0
tolerance degree : ± 4.0

rack travel mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1045
Tolerance 1/min : ± 15

rack travel mm : 7.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 77.0
tolerance degree : ± 4.0

control lever
position degree : 19.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736801
Injection pump
Pump designation : PES6P110A120RS7186
EP type number : 0412716800
Governor
Governor design. : RQV350...1250PA924
: -1K
Governor no. : 0421815226
Cust. part No. :

Customer-spec. information

Customer : CDC
Motor : 6BTA

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413047
Overflow quantity
min. l/h : 165
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 4.40
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 17.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1375

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : ± 4.0

rack travel mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1480

LOW IDLE

control lever
position degree : 15.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : ± 0.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.55
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 10.35
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 10.20
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 4.93
Tolerance mm : \pm 4.93

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 900
rack travel mm : 10.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 6.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 200
rack travel mm : 7.45
Tolerance mm : \pm 0.05

Pressure hPa : 330
rack travel mm : 8.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736855
Injection pump
Pump designation : PES6P120A120RS7206
EP type number : 0412726835
Governor
Governor design. : RGV350...1100PA964
: -9K
Governor no. : 0421815425
Cust. part No. : 3282061

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 190.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.60
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 1.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 9.9
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 156.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.36
Tolerance mm : ± 0.25

Rated speed rpm : 1177
guide sleeve
travel mm : 8.80
Tolerance mm : ± 0.25

Rated speed rpm : 828
guide sleeve
travel mm : 5.95
Tolerance mm : ± 0.25

Rated speed rpm : 399
guide sleeve
travel mm : 1.98
Tolerance mm : ± 0.25

Rated speed rpm : 449

guide sleeve
travel mm : 2.67
Tolerance mm : ± 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.46
Tolerance mm : ± 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1375

Rack travel in mm : 11.00
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 156.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 117.0
tolerance degree : ± 4.0

rack travel mm : 11.00
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1285
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1400
rack travel mm : 12.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1100
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 770
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Pressure hPa : 530
rack travel mm : 9.40
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 158.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000s. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736856
Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0412716804

Governor
Governor design. : RQV350...1250PA964
: -26K
Governor no. : 0421815426

Cust. part No. : 3282240

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 158.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.94
Tolerance mm : ± 0.25

Rated speed rpm : 1346
guide sleeve
travel mm : 8.44
Tolerance mm : ± 0.25

Rated speed rpm : 840
guide sleeve
travel mm : 4.58
Tolerance mm : ± 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 2.53
Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 2.76
Tolerance mm : ± 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1800

Del. quantity
cm³/1000 strokes : 158.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : ± 4.0

rack travel mm : 15.30
Rated speed rpm : 1325
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : + 0.10

Rated speed rpm : 250
CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.10
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : + 0.10

Rated speed rpm : 1250
rack travel mm : 16.30
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 13.70
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1800
rack travel mm : 16.30
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.05
Tolerance mm : + 0.20

Rated speed rpm : 1250

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Pressure hPa : 450
rack travel mm : 10.75
Tolerance mm : + 0.20

Pressure hPa : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 280
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 15.30
Rated speed rpm : 1325
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 13.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0402736857

Injection pump
Pump designation : PES6P110A120RS7263
EP type number : 0412716808

Governor
Governor design. : RQV350...1250PA964
 : -27K
Governor no. : 0421815427

Cust. part No. : 3282462

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 1.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 6.5
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.85

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400

rack travel mm : 11.65
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 570
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 775
rack travel mm : 13.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.95
Test oil : ISO 4113

Combination No. : 0400074879

Injection pump
Pump designation : PES4M55C320RS188
EP type number : 0410054935

Governor
Governor design. : RSF375/2000M80
Governor no. : 0420021281

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 59.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 400

Rack travel in mm : 4.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : -

Del. quantity

cm³/1000 strokes : 38.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 7.40

Rated speed rpm : 2250

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2550

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 3.40

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 12.30

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.50

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.15

Tolerance mm : ± 0.05

Rated speed rpm : 2000

rack travel mm : 12.15

Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 42.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2250
 rack travel mm : 7.40
 Tolerance mm : + 0.25
 Del. quantity
 cm3/1000 strokes : 24.5
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm3/1000 strokes : 54.0
 Spreed
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
 rack travel mm : 6.50
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 7.8

Check tolerance
 cm3/1000S. : + 2.3
 Spreed
 Check tolerance
 cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
 degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
 position degree : VWL
 Rated speed rpm : 425

Rack travel in mm : 8.70
 Tolerance mm : + 0.80
 Vacuum hPa : 400.0
 Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
 position degree : 14.0
 tolerance degree : + 2.0

control lever
 position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
 position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113

Combination No. : 0400075929

Injection pump
Pump designation : PES5M55C320RS177
EP type number : 0410055974

Governor
Governor design. : RSF340/2300M64-18
Governor no. : 0420021159

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM602A-USA
Power KW : 92.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H02

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 17.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 52.2

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spread

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 3.0

Rack travel in mm : 6.20

Tolerance mm : \pm 0.10

Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 strokes : \pm 0.5

Spread

Tolerance

cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity

cm3/1000 strokes : 52.2

Tolerance

cm3/1000 strokes : \pm 0.5

Check tolerance

cm3/1000S. : \pm 1.5

Spread

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 8.70

Rated speed rpm : 2500

rack travel mm : 0.50

H03

Tolerance mm : \pm 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.75

LOW IDLE

control lever

position degree : 10.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 315

rack travel mm : 6.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 4.60

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : $>$ 8.00

Rated speed rpm : 1000

CRT mm max. : 1.75

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 13.75

Tolerance mm : \pm 0.05

Rated speed rpm : 1600

rack travel mm : 13.10

Tolerance mm : \pm 0.10

Rated speed rpm : 2200

rack travel mm : 12.30

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1600
rack travel mm : -0.45
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1100
rack travel mm : -3.05
Tolerance mm : + 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -5.00
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1600
Del. quantity
cm3/1000 strokes : 50.8
Tolerance
cm3/1000 strokes : + 0.8
Check tolerance
cm3/1000S. : + 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 49.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 36.5

Tolerance
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000S. : + 1.5
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.70
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 54.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 8.7
Check tolerance
cm3/1000S. : + 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 35.50
degree : < 33.00

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 10.0
tolerance degree : \pm 2.0
Rated speed rpm : 340

Rack travel in mm : 13.80
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 3.5

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2950

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100
Current A : 1.80

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Receiving inspection
Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1850
Set quantity with
control lever
cm³/1000 strokes : 22.00
Set quantity with
control lever
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : \pm 0.5
Voltage Volt : 1.636
Tolerance Volt : \pm 0.003

Check tolerance
Volt : \pm 0.001

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0
Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1850
Rack travel in mm
Voltage Volt : 2.487
Tolerance Volt : \pm 0.030
Check tolerance
Volt : \pm 0.060

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402646789A

Injection pump
Pump designation : PE6P120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RQ300/1050PA1031-10
Governor no. : 0421801679

Cust. part No. : 0240740402

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 800

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 6.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.20
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 14.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 800
rack travel mm : 14.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.50
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 200
rack travel mm : 11.65
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 13.10
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 800
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 3.0

H08

Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400074085

Injection pump
Pump designation : PES4M55C320RS106-1
EP type number : 0410054969

Governor
Governor design. : RSV400...2200MOC351
Governor no. : 0420033034

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM616 (2,4 L)
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H10

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1550

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 37.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Speed

Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 3.0

2nd speed rpm : 400

Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : ± 1.0
Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 2180
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 72.0
rack travel mm : 11.00
Tolerance 1/min : ± 5
Rated speed rpm : 2245
rack travel mm : 4.00
Rated speed rpm : 2370
Tolerance 1/min : ± 15
rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 2550

LOW IDLE

H11

control lever
position degree : 40.0
tolerance degree : ± 4.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400
rack travel mm : 6.50
Tolerance mm : ± 0.10

rack travel mm : 2.00

Load pick-up

rack travel mm : 6.50
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1550
rack travel mm : 12.55
Tolerance mm : ± 0.05

Rated speed rpm : 1550
rack travel mm : 12.20
Tolerance mm : ± 0.10

Rated speed rpm : 1950
rack travel mm : 12.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1550
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

BREAKAWAY

Full load CRT mm : 11.00
Rated speed rpm : 2245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.30
Del. quantity
cm³/1000 strokes : 53.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 6.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Check tolerance
cm³/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 40.0
tolerance degree : \pm 4.0

control lever
position degree : 72.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 72.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95

Test oil : ISO 4113

Combination No. : 0400074910

Injection pump
Pump designation : PES4M55C320RS107-2
EP type number : 0410054962

Governor
Governor design. : RSF375/1700M18-1
Governor no. : 0420021028

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM616 (2.4 L)
Power KW : 45.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H13

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1650

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Del. quantity
cm³/1000 strokes : 7.5
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1650
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.20
Rated speed rpm : 1900

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2350

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 700

CRT mm max. : 1.45

LOW IDLE

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 11.00

Rated speed rpm : 700

CRT mm max. : 1.45

rack travel mm : 6.10
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1650
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 1200
rack travel mm : 12.20
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 600
Spreed
Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

degree : > 47.00
degree : < 30.00

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1900
rack travel mm : 7.20
Tolerance mm : \pm 0.20

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 53.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.10
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 8.3
Check tolerance
cm3/1000S. : \pm 1.8
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0400074922

Injection pump
Pump designation : PES4M55C320RS107-2
EP type number : 0410054962

Governor
Governor design. : RSF375/2250M18
Governor no. : 0420021017

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM616 (2.4 L)
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : ± 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 8.00
Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 2.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 10.50

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.20
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 11.80
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -

Rated speed rpm : 1800
 Del. quantity
 cm3/1000 strokes : 38.5
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2200
 Spreed
 Del. quantity
 cm3/1000 strokes : 39.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
 rack travel mm : 8.00
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 23.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm3/1000 strokes : 53.0
 Spreed
 Tolerance
 cm3/1000 strokes : 6.0

Check tolerance
 cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
 rack travel mm : 6.20
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 8.8
 Check tolerance
 cm3/1000S. : \pm 1.8
 Spreed
 Check tolerance
 cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
 degree : < 30.00

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
 position degree : 11.0
 tolerance degree : \pm 2.0

control lever
 position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
 position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0400074925

Injection pump
Pump designation : PES4M55C320RS107-1
EP type number : 0410054977

Governor
Governor design. : RSF375/2200M18-2
Governor no. : 0420021058

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM616
Power KW : 50.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H19

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Del. quantity
cm³/1000 strokes : 7.5
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 38.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 8.40
Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.95

LOW IDLE

H2O

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.50
Rated speed rpm : 750
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 11.00

Rated speed rpm : 1000

CRT mm max. : 1.95

rack travel mm : 6.60
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.25
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 12.70
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 12.20
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 38.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

degree : > 47.00
degree : < 30.00

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2500
rack travel mm : 8.40
Tolerance mm : +- 0.20

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.30
Del. quantity
cm3/1000 strokes : 53.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 6.60
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 8.3
Check tolerance
cm3/1000S. : +- 1.8
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400075010

Injection pump
Pump designation : PES5M55C320RS176
EP type number : 0410055975

Governor
Governor design. : RSV350...1500MOC353
: -9
Governor no. : 0420033045

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM602 (2,9L)
Power KW : 54.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1480

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 36.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : + 1.5

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350
Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : + 1.0
Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 101.0
rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1750

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : + 0.10

Load pick-up

Rated speed rpm : 100
CRT mm min. : > 20.10

rack travel mm : 5.40
Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1480
rack travel mm : 11.35
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : + 0.10

Rated speed rpm : 1300
rack travel mm : 11.50
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : + 0.8
Check tolerance
cm³/1000S. : + 1.8
Spread

Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1300
Spreed
Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

control lever
position degree : 69.0
tolerance degree : +- 4.0

control lever
position degree : 101.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 101.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : +- 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400075012

Injection pump
Pump designation : PES5M55C320RS182
EP type number : 0410055973

Governor
Governor design. : RSV350...1350MOC354
Governor no. : 0420033048

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM602A-ECE
Power KW : 92.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 17.90
Tolerance mm : ± 0.40

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 19.5
Tolerance : ± 0.20

Check
tolerance *NW : ± 0.30

BASIC SETTING

Del. quantity
cm³/1000 strokes : 53.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350

Del. quantity
cm³/1000 strokes : 7.0

Tolerance
cm³/1000 strokes : ± 0.5

Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1330

Ref. pressure
ALDA / ADA hPa : 1850

Del. quantity
cm³/1000 strokes : 53.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1370

rack travel mm : 4.00

Rated speed rpm : 1470

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1750

LOW IDLE

SET IDLE AUXILIARY SPRING

H26

Rated speed rpm : 350

rack travel mm : 5.20

Tolerance mm : ± 0.20

Load pick-up

rack travel mm : 5.20

Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350

rack travel mm : 2.00

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 800

Ref. pressure
ALDA / ADA hPa : 1550

rack travel mm : 0.45

Tolerance mm : ± 0.25

MEASUREMENT

Rated speed rpm : 800

Ref. pressure
ALDA / ADA hPa : 1050

rack travel mm : 3.65

Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1850

Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 50.8

Tolerance
cm³/1000 strokes : ± 0.8

Check tolerance
cm³/1000S. : ± 1.8

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1050

Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 34.5

Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

BREAKAWAY

Full Load CRT mm : 12.60
Rated speed rpm : 1370

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.10
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400075972

Injection pump
Pump designation : PES5M55C320RS108-3
EP type number : 0410055982

Governor
Governor design. : RSF350/2300M15
Governor no. : 0420021014

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM617 (3.0 L)
Power KW : 65.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350

Del. quantity
cm³/1000 strokes : 7.5
Tolerance
cm³/1000 strokes : ± 0.5
Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0
rack travel mm : 8.00
Rated speed rpm : 2500
rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : 1.45

LOW IDLE

J01

control lever
position degree : 11.0
tolerance degree : ± 2.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 9.50

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 4.20
Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 11.80
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0

Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 39.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.00
Tolerance mm : +- 0.20
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 53.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

J02

Rated speed rpm : 350
rack travel mm : 6.20
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 8.3
Check tolerance
cm3/1000S. : +- 1.8
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 30.00

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 11.0
tolerance degree : +- 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400075973

Injection pump
Pump designation : PES5M55C320RS108-2
EP type number : 0410055984

Governor
Governor design. : RSF350/1700M18-3
Governor no. : 0420021061

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM617 (3.0 l)
Power KW : 54.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 1650

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350

Del. quantity
cm3/1000 strokes : 7.5
Tolerance
cm3/1000 strokes : \pm 0.5
Speed
Tolerance
cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : \pm 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1650
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : \pm 0.5
Check tolerance
cm3/1000S. : \pm 1.5
Speed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.00
Rated speed rpm : 1900

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 2350

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 600
CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 12.0
tolerance degree : \pm 2.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 750
Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : $>$ 10.00

Rated speed rpm : 600

CRT mm max. : 1.45

rack travel mm : 4.10
Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1650
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 600
Speed
Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1900
rack travel mm : 7.00
Tolerance mm : + 0.20

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 53.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 8.3
Check tolerance
cm³/1000S. : + 1.8
Speed

Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 30.00

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 12.0
tolerance degree : + 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0401846971

Injection pump
Pump designation : PE6P110A320RS3302Z
EP type number : 0411816789

Governor
Governor design. : RQ300/1000PA1012-1
Governor no. : 0421801648

Cust. part No. : 1266367

Customer-spec. information
Customer : DAF
Motor : LS 195 M
Power KW : 195.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 300

Rack travel in mm : 7.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.07
Tolerance mm : + 0.10

Rated speed rpm : 1060
guide sleeve
travel mm : 6.35
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 373
guide sleeve
travel mm : 5.01
Tolerance mm : + 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 97.0
tolerance degree : + 4.0

rack travel mm : 12.95
Rated speed rpm : 1052
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 10.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 480
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Pressure hPa : 340
rack travel mm : 12.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1052
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 750.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 23.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0401846972

Injection pump
Pump designation : PE6P110A320RS3302Y
EP type number : 0411816790

Governor
Governor design. : RQ300/1000PA1012-1
Governor no. : 0421801648

Cust. part No. : 1253697

Customer-spec. information

Customer : DAF
Motor : LT 160 L
Power KW : 160.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 142.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.5

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 300

Rack travel in mm : 7.50
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.08
Tolerance mm : + 0.10

Rated speed rpm : 1060
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 372
guide sleeve
travel mm : 5.03
Tolerance mm : + 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1210

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 99.0
tolerance degree : + 4.0

rack travel mm : 12.05
Rated speed rpm : 1052
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1120
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

rack travel mm : 2.50
Rated speed rpm : 370
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 11.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 360
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Pressure hPa : 270
rack travel mm : 12.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 109.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 12.05
Rated speed rpm : 1052
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 23.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113
Combination No. : 0402646612
Injection pump
Pump designation : PE6P120A32ORS7248
: -10X
EP type number : 0412626907
Governor
Governor design. : RQ275/1150PA987
Governor no. : 0421801578

Cust. part No. : 1278688/3

Customer-spec. information
Customer : DAF
Motor : RS 200 M
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.92
Tolerance mm : + 0.10

Rated speed rpm : 1206
guide sleeve
travel mm : 6.49
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 351
guide sleeve
travel mm : 4.25
Tolerance mm : + 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 15.80
Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 172.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 102.0
tolerance degree : + 4.0

rack travel mm : 10.75
Rated speed rpm : 1192
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 340
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 10.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.75
Rated speed rpm : 1192
Tolerance 1/min : \pm 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0402646613

Injection pump
Pump designation : PE6P120A32ORS7248
: -10W
EP type number : 0412626908

Governor
Governor design. : RQ275/1150PA987
Governor no. : 0421801578

Cust. part No. : 1278684/3

Customer-spec. information
Customer : DAF
Motor : RS 180 M
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.95
Tolerance mm : + 0.10

Rated speed rpm : 1205
guide sleeve
travel mm : 6.51
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 351
guide sleeve
travel mm : 4.27
Tolerance mm : + 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 15.80
Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : + 4.0

rack travel mm : 9.75
Rated speed rpm : 1192
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 300
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Pressure hPa : 240
rack travel mm : 10.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 122.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.75
Rated speed rpm : 1192
Tolerance 1/min : \pm 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0402646614

Injection pump
Pump designation : PE6P120A320RS7248
: -10W
EP type number : 0412626908

Governor
Governor design. : RQV275...1150PA986
Governor no. : 0421813920

Cust. part No. : 1280139/3

Customer-spec. information

Customer : DAF
Motor : RS 180 M
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 154.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0
2nd speed rpm	: 275
Rack travel in mm	: 5.40
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 16.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve travel mm	: 1.44
Tolerance mm	: ± 0.25
Rated speed rpm	: 1206
guide sleeve travel mm	: 8.24
Tolerance mm	: ± 0.25
Rated speed rpm	: 799
guide sleeve travel mm	: 5.21
Tolerance mm	: ± 0.25
Rated speed rpm	: 315
guide sleeve travel mm	: 1.98
Tolerance mm	: ± 0.25

Rated speed rpm	: 365
guide sleeve travel mm	: 2.52
Tolerance mm	: ± 0.25

Rated speed rpm	: 450
guide sleeve travel mm	: 3.07
Tolerance mm	: ± 0.25

Rated speed rpm	: 1500
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1350
Rack travel in mm	: 9.70
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 154.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED

control lever position degree	: 118.0
tolerance degree	: ± 4.0
rack travel mm	: 9.75
Rated speed rpm	: 1192
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1290
Tolerance 1/min	: ± 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 175
CRT mm min. : $>$ 7.40

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : 300
Rated speed rpm : 600
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Rated speed rpm : 600

Pressure hPa : -

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rack travel mm : 9.50
Tolerance mm : \pm 0.10

Pressure hPa : 240
rack travel mm : 10.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 122.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.75
Rated speed rpm : 1192
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0402646615

Injection pump
Pump designation : PE6P120A320RS7248
: -10X
EP type number : 0412626907

Governor
Governor design. : RQV275...1150PA986
Governor no. : 0421813920

Cust. part No. : 1280141/3

Customer-spec. information
Customer : DAF
Motor : RS 200 M
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

EASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	172.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	± 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	9.0
<hr/>	
2nd speed rpm :	275
<hr/>	
Rack travel in mm :	5.40
Tolerance mm :	± 0.10
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	± 3.0
Check tolerance	
cm ³ /1000S. :	± 6.0
Spread	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S. :	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	275
guide sleeve	
travel mm :	1.44
Tolerance mm :	± 0.25
<hr/>	
Rated speed rpm :	1206
guide sleeve	
travel mm :	8.24
Tolerance mm :	± 0.25
<hr/>	
Rated speed rpm :	799
guide sleeve	
travel mm :	5.21
Tolerance mm :	± 0.25
<hr/>	
Rated speed rpm :	315
guide sleeve	
travel mm :	1.98
Tolerance mm :	± 0.25

Rated speed rpm :	365
guide sleeve	
travel mm :	2.52
Tolerance mm :	± 0.25
<hr/>	
Rated speed rpm :	450
guide sleeve	
travel mm :	3.07
Tolerance mm :	± 0.25
<hr/>	
Rated speed rpm :	1500
guide sleeve	
travel mm :	11.50
Tolerance mm :	± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1335
<hr/>	
Rack travel in mm :	10.30
Tolerance mm :	± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	172.0
Tolerance	
cm ³ /1000 strokes :	± 1.0
Check tolerance	
cm ³ /1000S. :	± 4.0
Spread	
Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S. :	9.0

RATED SPEED

control lever	
position degree :	119.0
tolerance degree :	± 4.0
<hr/>	
rack travel mm :	10.75
Rated speed rpm :	1192
Tolerance 1/min :	± 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1305
Tolerance 1/min :	± 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : $>$ 7.40

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 368

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 340

rack travel mm : 11.25
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 10.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.75
Rated speed rpm : 1⁹²
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0402646624

Injection pump
Pump designation : PE6P120A320RS7299
EP type number : 0412626885

Governor
Governor design. : RQV275...1000PA1075K
Governor no. : 0421815356

Cust. part No. : 1280155

Customer-spec. information
Customer : DAF
Motor : WS 295 M
Power kW : 295.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 279.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 17.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : + 0.15

Rated speed rpm : 1046
guide sleeve
travel mm : 9.83
Tolerance mm : + 0.20

Rated speed rpm : 689
guide sleeve
travel mm : 6.43
Tolerance mm : + 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : + 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.17

Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.79
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1135

Rack travel in mm : 13.60
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 279.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : + 4.0

rack travel mm : 13.45
Rated speed rpm : 1032
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : $>$ 7.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 14.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 9.00

Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 840
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Pressure hPa : 430
rack travel mm : 10.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.45
Rated speed rpm : 1032
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0402646658

Injection pump
Pump designation : PE6P130A720RS7371
EP type number : 0412636837

Governor
Governor design. : RQV250...900PA1215
Governor no. : 0421814139

Cust. part No. : 3825482
: -P01 11.01.95

Customer-spec. information
Customer : PENTA
Motor : TAMD 163 A
Power KW : 405.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1457413010

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 4688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.80
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 379.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 5.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.12
Tolerance mm : + 0.25

Rated speed rpm : 959
guide sleeve
travel mm : 8.22
Tolerance mm : + 0.25

Rated speed rpm : 315
guide sleeve
travel mm : 1.98
Tolerance mm : + 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.47
Tolerance mm : + 0.25

Rated speed rpm : 650
guide sleeve
travel mm : 4.40
Tolerance mm : + 0.25

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50

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Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1030

Rack travel in mm : 11.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 379.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 5.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

RATED SPEED

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

rack travel mm : 12.20
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1030
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1120

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 6.70
Tolerance mm : \pm 0.20

Rated speed rpm : 150

CRT mm min. : $>$ 8.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 6.10
Tolerance mm : \pm 0.15

Pressure hPa : 170
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 406.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 945
Tolerance 1/min : \pm 5

LOW IDLE

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95
Test oil : ISO 4113

Combination No. : 0402736810

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0412716804

Governor
Governor design. : RQV400...1250PA964
: -2K
Governor no. : 0421815254

Cust. part No. : 3921777

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 141.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 6.0
Tolerance : ± 0.10

Check
tolerance *NW : + 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

rack travel mm : 13.80
Rated speed rpm : 1300
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 690
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 365
rack travel mm : 10.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

K05

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95
Test oil : ISO 4113
Combination No. : 0402736862
Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0412716805
Governor
Governor design. : RQV350...1200PA964
: -30K
Governor no. : 0421815432
Cust. part No. : 3282469

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 192.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 192.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

rack travel mm : 13.20
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.75
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 12.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1200

rack travel mm : 14.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.00
Tolerance mm : + 0.20

Rated speed rpm : 1100

Pressure hPa : 785
rack travel mm : 13.00
Tolerance mm : + 0.20

Pressure hPa : 335
rack travel mm : 9.65
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 184.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 92.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1250
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0403476127

Injection pump
Pump designation : PES6MW100/72ORS1205
EP type number : 0413406195

Governor
Governor design. : RSV750...1250MWOA325
: -5
Governor no. : 0420085208

Cust. part No. : 0240743402

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 185.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 17.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1230

Rack travel in mm : 15.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 122.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 750

Rack travel in mm : 5.20

Tolerance mm : \pm 0.50

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 1.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 94.0
tolerance degree : \pm 4.0

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 750
rack travel mm : 5.20
Tolerance mm : \pm 0.30

rack travel mm : 2.00

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1230
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 15.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 750
rack travel mm : 5.20
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.03.95
Test oil : ISO 4113
Combination No. : 0402746988
Injection pump
Pump designation : PES6P120A320LS7322
EP type number : 0412726904
Governor
Governor design. : RQV350...1150PA1140K
Governor no. : 0421815409

Cust. part No. : 1823136C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 139.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : VL
Rated speed rpm : 1365

Rack travel in mm : 10.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 168.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 6.0

rack travel mm : 11.60
Rated speed rpm : 1215
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.40
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.65
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.05
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 11.70
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 12.65
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 1150
Pressure hPa : 650
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 10.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 280
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1215
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0402736844

Injection pump
Pump designation : PES6P120A120RS7287
EP type number : 0412726896

Governor
Governor design. : RQV400...1250PA964
: -21K
Governor no. : 0421815354

Cust. part No. : 3921925

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 171.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : MAX
Rated speed rpm : 1475

Rack travel in mm : 10.50
Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 194.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 6.0

rack travel mm : 13.40
Rated speed rpm : 1315
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.90
Tolerance mm : + 0.20

Rated speed rpm : 300
CRT mm min. : > 9.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.85
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 14.00
Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : + 0.20

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1150

Pressure hPa : 645
rack travel mm : 13.50
Tolerance mm : \pm 0.30

Pressure hPa : 355
rack travel mm : 11.30
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 315
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0402736846

Injection pump
Pump designation : PES6P120A120RS7287
EP type number : 0412726896

Governor
Governor design. : RQV400...1250PA1081K
Governor no. : 0421815360

Cust. part No. : 3924903

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1410

Rack travel in mm : 13.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0

K19

tolerance degree : + 6.0

rack travel mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.60
Tolerance mm : + 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250

Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 585
rack travel mm : 12.90
Tolerance mm : \pm 0.30

Pressure hPa : 305
rack travel mm : 10.95
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 315
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0402736848

Injection pump
Pump designation : PES6P120A120RS7314
EP type number : 0412726901

Governor
Governor design. : RQV400...1250PA964
: -23K
Governor no. : 0421815374

Cust. part No. : 3921922

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 169.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 169.5
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : ± 6.0

rack travel mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.80
Tolerance mm : ± 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 150
rack travel mm : 14.35
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.90
Tolerance mm : ± 0.20

Rated speed rpm : 1250
rack travel mm : 14.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 500
rack travel mm : 13.30
Tolerance mm : ± 0.30

Pressure hPa : 375

rack travel mm : 12.20
Tolerance mm : \pm 0.20

Check tolerance
cm³/1000S. : \pm 25.0

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113
Combination No. : 0402736866
Injection pump
Pump designation : PES6P120A120RS7349
EP type number : 0412726920
Governor
Governor design. : RQV400...1250PA1171K
Governor no. : 0421815437

Cust. part No. : 3928149

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

K24

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 6.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1410

Rack travel in mm : 13.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0

K25

tolerance degree : \pm 6.0

rack travel mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.60
Tolerance mm : \pm 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250

Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 585
rack travel mm : 12.90
Tolerance mm : \pm 0.30

Pressure hPa : 305
rack travel mm : 10.95
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 315
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113
Combination No. : 0402736867
Injection pump
Pump designation : PES6P120A120RS7350
EP type number : 0412726921
Governor
Governor design. : RQV400...1150PA1172K
Governor no. : 0421815438

Cust. part No. : 3928147

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

K27

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : + 6.0

rack travel mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 6.50
Tolerance mm : + 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.90
Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 14.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.35
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 1150
Pressure hPa : 500
rack travel mm : 13.40
Tolerance mm : + 0.30
Pressure hPa : 375
rack travel mm : 12.30
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

L01

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0400846592
Injection pump
Pump designation : PES6A95D410RS2797
EP type number : 0410896900
Governor
Governor design. : RQV300...1200AB1065
: -24L
Governor no. : 0420212228
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 92.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 8.80

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 59.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : ± 4.0

rack travel mm : 8.90
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 77.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 500
rack travel mm : 8.80
Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 9.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 575

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 9.95
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : ± 0.10

Rated speed rpm : 840
rack travel mm : 10.35
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0400874240
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0410894029
Governor
Governor design. : RSV350...1400AOC2006
: -1L
Governor no. : 0420232449
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 66.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.30
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 63.5
Tolerance
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Speed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 350

Rack travel in mm : 7.90
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 109.0
tolerance degree : ± 4.0

rack travel mm : 9.40
Rated speed rpm : 1435
Tolerance 1/min : ± 5

rack travel mm : 4.00

L06

Rated speed rpm : 1495
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1575

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 1.50

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 11.20
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1435
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : \pm 0.10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0400876331
Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0410896082
Governor
Governor design. : RSV350...1400A0C2006
: -2L
Governor no. : 0420232453
Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 7.0

2nd speed rpm : 350

Rack travel in mm : 8.10

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 8.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 65.5

Tolerance
cm3/1000 strokes : \pm 0.5

Check tolerance
cm3/1000S. : \pm 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 7.0

RATED SPEED

control lever
position degree : 111.0
tolerance degree : \pm 4.0

rack travel mm : 9.70
Rated speed rpm : 1435
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : \pm 15

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1435
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 7.0

Note remarks

Edition : 09.08.93
Test oil : ISO 4113

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0410896082

Governor
Governor design. : RSV350...1400A0C2006
: -2L
Governor no. : 0420232453

Cust. part No. :

Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure : 173.5 bar
Tolerance bar : ± 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

```
Prestroke mm      :      2.30
Tolerance mm      : + 0.05
```

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance °NW : + 0.75
```

Rated speed rpm : 1200

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 56.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

2nd speed rpm : 350

Rack travel in mm : 8.50

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 56.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spreed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

RATED SPEED

control lever
position degree : 105.0
tolerance degree : + 4.0

rack travel mm : 9.30
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1360

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.50

Testing:

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.35
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : + 0.05

Rated speed rpm : 700

rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5
Spreed
Check tolerance
cm³/1000S. : 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5
Spreed
Check tolerance
cm³/1000S. : 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5
Spreed
Check tolerance
cm³/1000S. : 5.5

BREAKAWAY

Rack travel in mm : 9.30
Rated speed rpm : 1245
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0400876406

Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0410896896

Governor
Governor design. : RSV400...1050A2C2263
 : -9L
Governor no. : 0420232616

Cust. part No. :

Customer-spec. information

Customer : FNH-GEOTECH
Motor : 7.5 L-8740 Trak
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery blocking at start of delivery of cylinder no. 1.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 132.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 132.0
Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 12.40

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 620
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 15.10
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : + 0.20

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.10
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 12.15
Tolerance mm : \pm 0.20

Pressure hPa : 900
rack travel mm : 14.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 12.40

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0402046824

Injection pump
Pump designation : PES6P120A320RS3279
: -1
EP type number : 0412026758

Governor
Governor design. : RQ275/1050PA999-5
Governor no. : 0421801663

Cust. part No. : CCEP-5112B 66-175

Customer-spec. information
Customer : RVI
Motor : MIHR 062045 A/3
Power kW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

L17

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.25

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 160.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

2nd speed rpm : 275

Rack travel in mm : -4.90
Tolerance mm : \pm 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1126
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 582
guide sleeve
travel mm : 5.14
Tolerance mm : \pm 0.10

Rated speed rpm : 710
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1380
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 750

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

RATED SPEED

control lever
position degree : 274.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : \pm 8

rack travel mm : -7.20
Rated speed rpm : 1245
Tolerance 1/min : \pm 15

rack travel mm : -10.75
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -4.90
Tolerance mm : \pm 0.10

rack travel mm : -8.90
Rated speed rpm : 520
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm max. : < -3.40

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.20
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : -0.45
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -0.85
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050

Del. quantity
cm3/1000 strokes : 156.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -4.90
Tolerance mm : + 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113
Combination No. : 0402646653
Injection pump
Pump designation : PE6P120A320RS7360
EP type number : 0412626936

Governor
Governor design. : RQ275/1150PA1193
Governor no. : 0421801752

Cust. part No. : 1294723/2

Customer-spec. information
Customer : DAF
Motor : GS 200 M
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
°NW after s.o.d. : 0.3
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 178.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 38.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.94
Tolerance mm : \pm 0.10

Rated speed rpm : 1205
guide sleeve
travel mm : 6.49
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 353

guide sleeve
travel mm : 4.33
Tolerance mm : \pm 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 15.80
Tolerance mm : \pm 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : \pm 4.0

rack travel mm : 10.70
Rated speed rpm : 1202
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : \pm 15

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 11.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 390
rack travel mm : 10.95
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.70
Rated speed rpm : 1202
Tolerance 1/min : \pm 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0402646654

Injection pump
Pump designation : PE6P120A32ORS7360Z
EP type number : 0412626937

Governor
Governor design. : RQ275/1150PA1193
Governor no. : 0421801752

Cust. part No. : 1285911/3

Customer-spec. information
Customer : DAF
Motor : GS 160 M
Power KW : 160.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.92
Tolerance mm : + 0.10

Rated speed rpm : 1206
guide sleeve
travel mm : 6.49
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 351
guide sleeve
travel mm : 4.25
Tolerance mm : + 0.10

Rated speed rpm : 440
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 15.80
Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : + 4.0

rack travel mm : 9.50
Rated speed rpm : 1202
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : + 20

Rated speed rpm : 175

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.50
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 10.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.50
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.70
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 290
rack travel mm : 10.15
Tolerance mm : + 0.05

Pressure hPa : 260
rack travel mm : 9.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1202
Tolerance 1/min : + 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113

Combination No. : 0403244037

Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0413204017

Governor
Governor design. : RQV300...1300MW132
: -6
Governor no. : 0420083309

Cust. part No. : 0240744002

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.77
 Tolerance mm : + 0.25
 Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : + 0.25
 Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : + 0.25
 Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : + 0.25
 Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : + 0.25
 Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 126.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 4.0
 Spreed
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

RATED SPEED

control lever
 position degree : 116.0
 tolerance degree : + 4.0
 rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.95
Test oil : ISO 4113

Combination No. : 0403244044

Injection pump
Pump designation : PES4MW100/320RS1521
EP type number : 0413204020

Governor
Governor design. : RQV400...1200MW147
Governor no. : 0420083320

Cust. part No. : 51.11103-7412

Customer-spec. information

Customer : SNF
Motor : D0824 LFL04
Power KW : 81.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 8.0

x inside diameter : 2.0

M02

x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.55
Tolerance mm : \pm 0.25

Rated speed rpm : 1253
guide sleeve
travel mm : 9.86
Tolerance mm : \pm 0.25

Rated speed rpm : 848
guide sleeve
travel mm : 5.69
Tolerance mm : \pm 0.25

Rated speed rpm : 448
guide sleeve
travel mm : 2.05
Tolerance mm : \pm 0.25

Rated speed rpm : 498

guide sleeve
travel mm : 2.59
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 125.0
tolerance degree : \pm 4.0

rack travel mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Pressure hPa : 130

MO4

rack travel mm : 10.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 200
Check
speed 1/min : $>$ 180
Rated speed rpm : $<$ 300
Check
speed 1/min : $<$ 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 800
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0403244046
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0413204022
Governor
Governor design. : RQV300...1300MW132
 : -13
Governor no. : 0420083330
Cust. part No. : 0260746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : + 0.25
 Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : + 0.25
 Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25
 Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : + 0.25
 Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : + 0.25
 Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

M07

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1390
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 113.0
 tolerance degree : + 4.0
 rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0403244047
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0413204022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0420083330
Cust. part No. : 0260746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

M10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.90
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : \pm 0.25

Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : \pm 0.25

Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : \pm 0.25

Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : \pm 0.25

Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : \pm 0.25

Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : \pm 0.25

Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1390
 Rack travel in mm : 10.00
 Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 126.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 4.0
 Spread
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

RATED SPEED

control lever
 position degree : 113.0
 tolerance degree : \pm 4.0

rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.92
Test oil : ISO 4113
Combination No. : 0403444142
Injection pump
Pump designation : PES4MW100/720RS1212
EP type number : 0413404114

Governor
Governor design. : RQV300...1300MW50
-15
Governor no. : 0420083238

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 102.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rack travel in mm : 6.50
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : + 0.25

Rated speed rpm : 1355
guide sleeve
travel mm : 8.65
Tolerance mm : + 0.25

Rated speed rpm : 885
guide sleeve
travel mm : 5.01
Tolerance mm : + 0.25

Rated speed rpm : 355
guide sleeve
travel mm : 1.96
Tolerance mm : + 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.33
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.92
Tolerance mm : + 0.25

Rated speed rpm : 1610
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm3/1000 strokes : 102.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 111.0
tolerance degree : + 4.0

rack travel mm : 12.20
Rated speed rpm : 1345
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

rack travel mm : 6.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : ± 2.0
Check tolerance
cm3/1000S. : ± 4.5
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113

Combination No. : 0403474008

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : 914 TI
Power KW : 120.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

M18

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 400

Rack travel in mm : 6.20

Tolerance mm : ± 0.20

Del. quantity

cm³/1000 strokes : 22.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Spreed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 100.0
tolerance degree : ± 4.0

rack travel mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1175

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.15
Tolerance mm : ± 0.05

Check tolerance : 5.5
cm³/1000s.

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000s. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.93
Test oil : ISO 4113

Combination No. : 0403474021

Injection pump
Pump designation : PES4MW100/72ORS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0420085183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

M21

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 10.90

Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 988
Tolerance 1/min : + 8

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.25

Testing:

Rated speed rpm : 400
rack travel mm : 5.25
Tolerance mm : + 0.25

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 400
rack travel mm : 13.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 550

Pressure hPa : 530
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.93
Test oil : ISO 4113

Combination No. : 0403474021B

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0420085183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

M24

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0
rack travel mm : 10.90

M25

Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 988
Tolerance 1/min : + 8

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.25

Testing:

Rated speed rpm : 400
rack travel mm : 5.25
Tolerance mm : + 0.25

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 400
rack travel mm : 13.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 550

Pressure hPa : 530
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1100
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113

Combination No. : 0403474021C

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0420085183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

2nd speed rpm : 500

Rack travel in mm : 6.25
Tolerance mm : + 0.25

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 157.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 988
Tolerance 1/min : + 8

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 6.25

Testing:

Rated speed rpm : 500
rack travel mm : 5.25
Tolerance mm : + 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 13.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 550

Pressure hPa : 530
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

NO1

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 500
rack travel mm : 6.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.95
Test oil : ISO 4113
Combination No. : 0403476137
Injection pump
Pump designation : PES6MW100/720RS1196
: -1
EP type number : 0413406219
Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. : 927 7706

Customer-spec. information
Customer : LIEBHERR
Motor : D 916 T
Power kW : 132.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

2nd speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0
Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : +- 4.0

rack travel mm : 10.25
Rated speed rpm : 945
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : +- 10

rack travel mm : 1.00
Tolerance mm : +- 0.70
Rated speed rpm : 1080

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 75.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.60

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : +- 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.25
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : +- 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 10.25
Rated speed rpm : 945
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 2.0

N05

Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0400075921

Injection pump
Pump designation : PES5M55C320RS189
EP type number : 0410055953

Governor
Governor design. : RSF385/2000M81
Governor no. : 0420021282

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM 602 2,9ltr
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

N06

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.15

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 385

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 9.5

Tolerance

cm³/1000 strokes : ± 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : -

Del. quantity

cm³/1000 strokes : 38.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 7.40

Rated speed rpm : 2250

rack travel mm : 0.50

Tolerance mm : ± 0.60

Rated speed rpm : 2550

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 385

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.00

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : 12.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.90

Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.00

Tolerance mm : ± 0.05

Rated speed rpm : 2000

rack travel mm : 12.00

Tolerance mm : ± 0.30

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2000
 Del. quantity
 cm³/1000 strokes : 41.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2250
 rack travel mm : 7.40
 Tolerance mm : ± 0.50
 Del. quantity
 cm³/1000 strokes : 24.5
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.60
 Tolerance mm : ± 1.50
 Del. quantity
 cm³/1000 strokes : 59.0
 Tolerance
 cm³/1000 strokes : ± 4.0
 Check tolerance
 cm³/1000S. : ± 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 8.5

LOW IDLE

Rated speed rpm : 385

rack travel mm : 5.90
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 9.5
 Check tolerance
 cm³/1000S. : ± 2.3
 Spreed
 Check tolerance
 cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00

degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
 position degree : VWL
 Rated speed rpm : 400

Rack travel in mm : 8.90
 Tolerance mm : ± 0.80
 Vacuum hPa : 400.0
 Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
 position degree : 14.0
 tolerance degree : ± 2.0

control lever
 position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
 position degree : 50.0

Note remarks

Edition : 28.03.95
Test oil : ISO 4113

Injection pump
Pump designation : PES4A95D410RS2837
EP type number : 0410894991

Cust. part No. : 024 074 48 02

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure
bar : 173.5
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

Prestroke mm	:	3.25
Tolerance mm	:	+ 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : \pm .50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : \pm 0.50
Check
tolerance *NW : \pm 0.75

Rated speed rpm : 1400

Rack travel in mm : 8.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm3/1000S.	:	8.0
2nd speed rpm	:	300
Rack travel in mm	:	5.00
Tolerance mm	:	+ 0.10
Del. quantity cm3/1000 strokes	:	12.0
Tolerance cm3/1000 strokes	:	+ 2.0
Check tolerance cm3/1000S.	:	+ 4.5
Spread Tolerance cm3/1000 strokes	:	5.5
Check tolerance cm3/1000S.	:	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	1.35
Tolerance mm	:	+ 0.25
Rated speed rpm	:	1453
guide sleeve travel mm	:	8.77
Tolerance mm	:	+ 0.25
Rated speed rpm	:	921
guide sleeve travel mm	:	5.42
Tolerance mm	:	+ 0.25
Rated speed rpm	:	367
guide sleeve travel mm	:	2.41
Tolerance mm	:	+ 0.25
Rated speed rpm	:	417
guide sleeve travel mm	:	3.01
Tolerance mm	:	+ 0.25
Rated speed rpm	:	490
guide sleeve travel mm	:	3.42
Tolerance mm	:	+ 0.25
Rated speed rpm	:	1740
guide sleeve travel mm	:	11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree	:	- 1
Rated speed rpm	:	1450
Rack travel in mm	:	16.50
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1400
Aneroid pressure hPa	:	-
Del. quantity cm3/1000 strokes	:	72.0
Tolerance cm3/1000 strokes	:	+ 1.0
Check tolerance cm3/1000S.	:	+ 3.0
Spread Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000S.	:	8.0

RATED SPEED

control lever position degree	:	115.0
tolerance degree	:	+ 4.0
rack travel mm	:	7.85
Rated speed rpm	:	1445
Tolerance 1/min	:	+ 5
rack travel mm	:	4.00
Rated speed rpm	:	1520
Tolerance 1/min	:	+ 15
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1650

LOW IDLE

control lever position degree	:	70.0
tolerance degree	:	+ 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.00

Testing:

Rated speed rpm : 100
CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.95
Test oil : ISO 4113

Combination No. : 0401846992

Injection pump
Pump designation : PE6P110A320RS3266
EP type number : 0411816777

Governor
Governor design. : RQV300...1100PA1182
Governor no. : 0421814110

Cust. part No. : 11030875 P03 v.02.95

Customer-spec. information
Customer : VME
Motor : TD63KBE LAD. L90
Power KW : 115.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 12.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.51
Tolerance mm : + 0.25

Rated speed rpm : 1172
guide sleeve
travel mm : 8.69
Tolerance mm : + 0.25

Rated speed rpm : 822
guide sleeve
travel mm : 5.40
Tolerance mm : + 0.25

Rated speed rpm : 356
guide sleeve
travel mm : 1.99
Tolerance mm : + 0.25

Rated speed rpm : 406
guide sleeve
travel mm : 2.42
Tolerance mm : + 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1240

Rack travel in mm : 11.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 140.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 0.0
tolerance degree : + 4.0

control lever
position degree : 116.0
tolerance degree : + 4.0

rack travel mm : 11.00
Rated speed rpm : 1160
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1330

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + 4.0

control lever
position degree : 18.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : \pm 0.20

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 12.40
Tolerance mm : \pm 0.15

Rated speed rpm : 820
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 625
rack travel mm : 12.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1500
rack travel mm : 12.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 625
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 625

Pressure hPa : 760
rack travel mm : 2.60
Tolerance mm : \pm 0.20

Pressure hPa : 80
rack travel mm : 0.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 2.0

Aneroid pressure
hPa : -
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.95
Test oil : ISO 4113

Combination No. : 0402648947C

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQ300/950PA1032-12
Governor no. : 0421801741

Cust. part No. : 0230749602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power kW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.72
Tolerance mm : \pm 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.34
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 451

guide sleeve
travel mm : 4.76
Tolerance mm : \pm 0.10

Rated speed rpm : 580
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1.50

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

rack travel mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : \pm 30

Rated speed rpm : 200
CRT mm min. : $>$ 9.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.80
Tolerance mm : \pm 0.15

Pressure hPa : 550

rack travel mm : 13.70
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $>$ 220
Check
speed 1/min : $>$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.95
Test oil : ISO 4113

Combination No. : 0402648953B

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQV300...950PA1033
: -10
Governor no. : 0421814040

Cust. part No. : 0230749702

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

N20

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 0.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1009
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.15

Rated speed rpm : 567
guide sleeve
travel mm : 4.66
Tolerance mm : + 0.25

Rated speed rpm : 617
guide sleeve
travel mm : 5.23
Tolerance mm : + 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : + 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1035

Rack travel in mm : 14.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 254.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : + 4.0

rack travel mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : \pm 30

Rated speed rpm : 200

CRT mm min. : $>$ 9.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10

Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Pressure hPa : 550
rack travel mm : 13.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550

Rated speed rpm : 50

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 1000

Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 242.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.95
Test oil : ISO 4113

Combination No. : 0402676824

Injection pump
Pump designation : PE6P120A320RS7365
EP type number : 0412626940

Governor
Governor design. : RSV300...900P1A594
: -1
Governor no. : 0421833477

Cust. part No. : 11031889 P02 v.02.95

Customer-spec. information
Customer : VME
Motor : TD 122 KIE
Power KW : 284.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

N24

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 297.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

N25

Del. quantity
cm³/1000 strokes : 297.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

RATED SPEED

control lever
position degree : 58.0
tolerance degree : \pm 4.0

control lever
position degree : 108.0
tolerance degree : \pm 4.0

rack travel mm : 9.70
Rated speed rpm : 935
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1005
Tolerance 1/min : \pm 15

rack travel mm : 0.80
Tolerance mm : \pm 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

control lever
position degree : 32.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 330
rack travel mm : 3.40

Testing:

Rated speed rpm : 330
rack travel mm : 3.90
Tolerance mm : \pm 0.20

rack travel mm : 2.00

Rated speed rpm : 420
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.70
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.50
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 2.90
Tolerance mm : + 0.20

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 282.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 9.0
Check tolerance
cm³/1000S. : 13.0

Aneroid pressure
hPa : -

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 935
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0